THE NANDI.[1]

MR. A. C. HOLLIS, who holds an important post in British East Africa, is favourably known to ethnologists as the author of a valuable book on the language and folk-lore of the Masai, and now ethnologists are indebted to him for a companion work on the Nandi, concerning whom much less was previously known than about their belligerent neighbours. One-half of the new book is taken up with a vocabulary and grammar of the Nandi language. This is a sister language to that of the Masai, and just as there is probably a strain of Galla or Somali blood in the Nandi, Masai, &c., so also there is nothing improbable in the idea that Somali influence may be traceable in their language. They certainly owe to it some of their numerals, and it may be that the use of the articles and the order of words are due to the same cause. But Sir Charles Eliot, who discusses this problem, states that in details he sees no proof of near kinship.

The general account of the Nandi given by Mr. Hollis is written with great care, and is illustrated by a number of clear figures in the text and a wealth of beautiful plates. The Nandi appear to be a mixture of Nilotic Negro and Bantu, with some pygmy element and a Galla strain. Originally they came from further north, and Mr. Hollis is of opinion that they have not occupied their present position on the plateau east of the Victoria Nyanza for more than a few generations. Their country was closed to Arab and Swahili traders, for the Nandi, who were hardy mountaineers and skilful fighters, refused to allow strangers to cross the threshold of their country without special permission. Punitive expeditions against them were made in 1895, 1900, 1903, and 1905. Now they are moved into a reserve, and it is hoped that a difficult native problem has been finally settled.

In the Nandi we have an example of an originally hunting people who became pastoral, and, according to Sir Charles Eliot, have within the last few generations betaken themselves to agriculture, though in a somewhat desultory fashion. Like the Masai, they regarded raiding as the most important business of life, and their social institutions are very similar. They are divided geographically into fifteen districts or divisions, and parishes or subdivisions, and genealogically into clans and families. Each clan has one or more totem or sacred animal, but totemism is on the wane, as marrying into the same clan is permitted, and though it is now considered wrong for a man to kill his sacred animal, to whom an apology is expected, in former times the killing of a sacred animal by the clansman was strictly forbidden. A man of the elephant clan shot an elephant because it had good tusks. When the animal was dead he went up to it and said, "So sorry, old fellow, I thought you were a rhino." He traded the tusks with the Swahili, gave the elders a present, and no notice was taken of his action. The supreme deity is Asista, the sun. He is the creator and giver of all good things; prayers are addressed and offerings made to him. There is also a kindly and a malevolent thunder god. The spirits of departed ancestors and adult relatives are held responsible for sickness and death, and are appealed to and propitiated whenever necessary. There is also a devil who prowls around seeking whom he may devour. The principal medicine man is the supreme chief of the whole race, with a hereditary position, but it seems that the office was borrowed from the Masai; he never prays to Asista, but only to the spirits of his ancestors.

A circumcision festival is held every seven and a half years, when most youths between the ages of, say, ten and twenty undergo the operation, which transforms them from boys into warriors. For about six months they remain isolated from women and children, and wear women's clothes, and for about half this time they also wear a remarkable head-dress (Fig. 1). Before their circumcision festival the girls dress in men's attire, and after it they wear long garments which reach from the neck to the feet, and their heads are enveloped in a complete hood which has only two holes for the eyes. It is customary for the Nandi to distribute their stock amongst their wives during their lifetime, each one being given a certain number to look after, tend, and milk. The sons of each wife inherit the property thus placed in their mother's charge. The boys usually are also given cattle from their earliest youth upwards. The eldest son of the principal wife inherits the lion's share of his father's property. There is a classificatory system of kinship, and the maternal uncle plays an important part in the existence of every Nandi. An understanding exists between a boy and his maternal uncle which is not met with between other relatives, and the maternal uncle is appealed to for intervention when a boy is in disgrace. The most

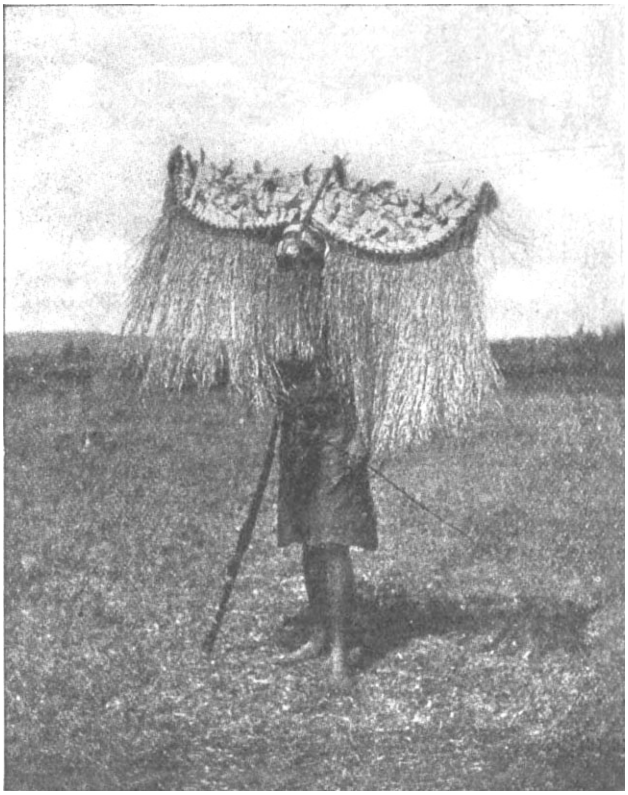

FIG. 1.—Boy wearing the Nyorkit Garb and the Kimaranguchet Head-dress. From "The Nandi."

---

[1] "The Nandi: their Language and Folk-lore." By A. C. Hollis. With Introduction by Sir Charles Eliot. Pp. xl+328. (Oxford: Clarendon Press, 1909.) Price 16s. net.

© 1909 Nature Publishing Group

terrible thing that can happen to a Nandi is to displease his maternal uncle. Thus it is evident that the Nandi have not long passed from the stage when mother-right obtained.

Mr. Hollis gives an account, illustrated with good figures, of most of the objects made, worn, or used by the Nandi, and a number of folk-tales and riddles are given in the original language and in translation. It will thus be seen that Mr. Hollis has made a noteworthy contribution to our knowledge of the ethnology of British East Africa. A. C. H.

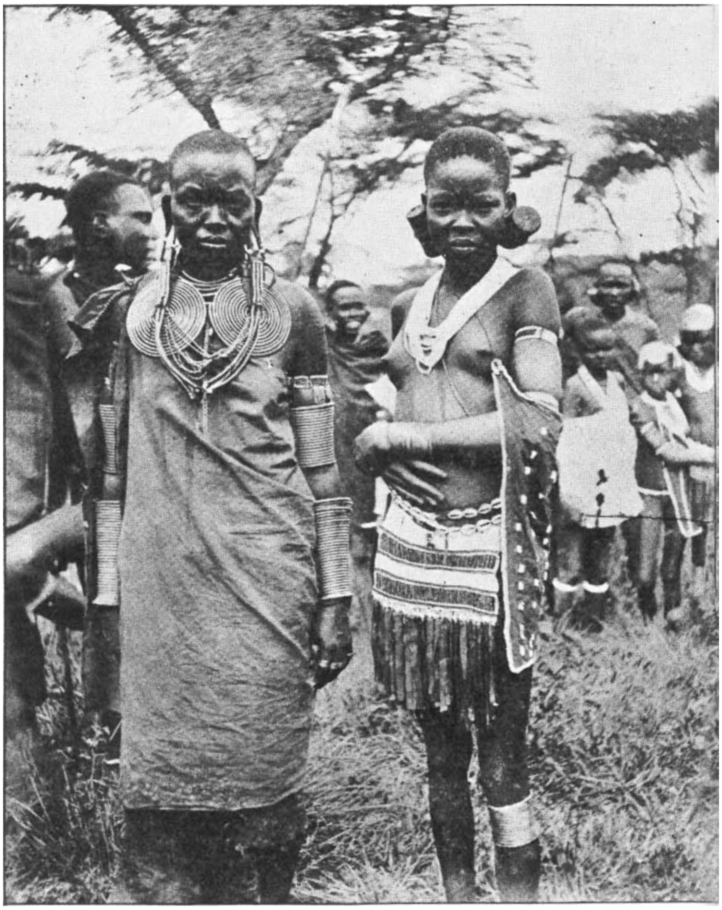

FIG. 2.—A wife and daughter of Ar-ap-Koilepe, the chief medicine man of the Lumbwa. From "The Nandi."

THE MICROSCOPE IN ENGINEERING.

DURING the past ten years the young science of metallography has made rapid strides, and in consequence of this development the microscope is steadily assuming an increasingly important position in the testing-laboratories of those who have to deal with metals, either as manufacturers or users. This position has, however, been accorded to it with some reluctance, partly, perhaps, because at the outset too much was claimed for the instrument. Another cause is to be found in the fact that, as is necessarily the case in all young sciences, theoretical development has outstripped practical application, and practical men are too apt to regard anything "theoretical" as practically useless. But even if we leave aside all questions of the promising future applications of these theoretical discoveries, a mass of purely practical results is now available in which the microscope has clearly demonstrated its immediate value.

Perhaps the most fruitful field for the application of the microscope in the present state of our knowledge of metals is the study of the nature and causes of breakages or other failures occurring in practice. That the thorough clearing up of such cases, wherever possible, is eminently desirable, both in the interests of the parties immediately concerned, and also for the sake of the general advancement of our knowledge, is so obvious that it need not be further insisted upon. It is just where our accepted knowledge and our usual practice go wrong that the field for fresh discoveries lies before us. The methods that are available for the *post-mortem* examination of breakages must depend very much upon the nature of each particular case; experiments that are possible with the broken end of a 12-inch shaft are not applicable to a small brass condenser tube. In every case, however, the first, and perhaps the most vital, step is the examination of the micro-structure of the material close to the actual fracture itself, and also of the mass of the material lying away from the fracture. The first of these sections will often show whether there is any special local weakness in the metal at the point of actual fracture, or whether the fracture itself displays any particular characteristic, for it is well known that the path which a fracture takes among the micro-constituents of a metal depends on both the nature of the metal and the manner in which the fracture was produced. In a given material, for instance, the section of a tensile or bending fracture is quite different from one produced by shock or by repeated alternations of stress. The difficulty about these observations lies, however, in preparing an actual section through the fracture, as this is usually either corroded or worn by subsequent friction; when it is clean and fresh, however, the actual fracture may be embedded in a thick deposit of electrolytic copper, and a satisfactory section may be cut through the compound mass thus formed. An example of a section of this kind is shown in Fig. 1.

Apart from the examination of the fracture itself, the general micro-structure of the material will, as a rule, reveal whether it has been subjected to any undue treatment during manufacture or use. Thus excessive heating, whether by exposure to an unduly high temperature or to a more moderate temperature for an unduly long time, leaves its trace in the form of a coarse, angular structure which is readily recognised in such materials as steel, brass, or bronze. Insufficient rolling or forging, or working at either too high or too low a temperature, can also be readily diagnosed. In many cases a useful guide can be obtained by comparing the micro-structure of the object which has failed with that of a similar object which has given good service; but this is only necessary where the material in question is one which has not been thoroughly studied, so that the effects of various forms of treatment on the micro-

© 1909 Nature Publishing Group